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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/784,170

Applicant(s)

BACK, DAE-WHAN

Examiner

Ryan C. Kavleski

Art Unit

2475

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

Response to Amendments

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. This communication is in response to Applicant's reply filed under 3 CFR 1.111 on 12/11/2009. Claims 1-10 remain pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsztoo et al (U.S Patent No. 6,639,915 B1)(Tsztoo hereafter) in view of Schlegel et al. (US Pat. 6,847,677)(Schlegel hereafter)**

Regarding claims 1 and 6, Tsztoo teaches a symbol buffer memory device [refer FIG. 9; 934] of a base station modem [refer FIG. 9; 900], in which the symbol data (i.e., voice data) is stored for transmission to a physical layer [column 13, lines 38-41] comprising: a buffer memory (voice packet buffer memory, refer FIG. 9; 934) for storing the symbol data for the logical channel according to input sequences (i.e., input CHANNEL_ADD, FIG. 9);

a start address table (i.e., channel address memory, refer FIG. 9; 922) for storing address information (the channel address memory stores channel base address values)[column 15 lines 1-10] according to the logical channels (the channel base addresses are based upon CHANNEL# values stored in the content addressable memory (CAM))[column 15 lines 1-10], each of the address information indicating a location of initial symbol data corresponding to each of the logical channels from among the symbol data stored in the buffer memory [column 15, lines 11-19](the CHANNEL# values determine the channel base address within the channel address memory [column 15 lines 1-10], so that voice data can then be read or written to the VPBM according to a channel [column 15 lines 15-55]);

a multiplexer [refer FIG. 9; 930] for selectively outputting the address information stored in the start address table [refer FIG. 9; 922] by an enable signal (i.e., enable signal sent from request arbiter 928 to mux 930) set for each of the logical channels [column 12, lines 50-54], and

when the symbol data is stored in the buffer (voice data is received from an external source)[column 12 lines 31-38][abstract], the address information indicating positions at which the initial symbol data of each logical channel is stored in the start address table (i.e., channel address memory 922, FIG. 9)(the channel address memory stores channel base address values [column 15 lines 1-10] determined by CHANNEL#'s from the CAM [column 15 lines 1-10], so that voice data can then be read or written to the VPBM according to a channel [column 15 lines 15-55]).

However Tsztoo fails to disclose in the current embodiment that the symbol data of the logical channels are stored in a continuous arrangement within the buffer memory.

Tsztoo discloses within a second embodiment a buffer memory [refer Fig. 4; 406], in communication with a CAM [refer Fig. 4; 410], that receives and stores the voice data together or "binned"(continuous arrangement) according to predetermined channel [column 10, lines 12-28][refer Fig. 7; 700-0].

It would have been obvious to one of ordinary skilled in the art given the two embodiments of Tsztoo to be able to modify the implementation of the buffer memory disclosed within the second embodiment with the voice packet buffer memory (VPBM) disclosed within the third embodiment. One would be motivated to do so to provide a variation of a buffer memory used for storing voice data according to particular channel that would be similar in operation [refer Fig. 4 and Fig. 9].

However Tsztoo fails to disclose the symbol memory buffer of the base station modem belongs to a mobile communication system, in which the symbol data corresponding to at least one logical channel and coded in at least one encoding ratio (i.e. modulation or encoding scheme) is stored.

Schlegel discloses, in the field of communications, a wireless communications system that communicates data bits (or symbols, as they are interchangeable) wirelessly over channels by encoding the data using a modulation and encoding scheme [column 4 lines 29-52], the data symbols, or data bits as encoded, can be

stored within a buffer memory, which can be designated for before being passed on for transmission [column 12 lines 44-47].

It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the teaching of Tsztoo to integrate and implement the symbol memory buffer of the base station modem within a wireless mobile communication system, in which the symbol data corresponding to at least one channel and coded in at least one encoding scheme is stored as taught by Schlegel. One would be motivated to do so to apply a known technique, such as wireless communication, data encoding and storage, to a known device, such as the voice apparatus transmitting voice data over a network taught by Tsztoo, ready for improvement to yield predictable results. Furthermore, one would be motivated to do so to provide a wireless communication system that receives and transmits voice and data information [refer Schlegel; column 6 lines 57-64] that would provide the voice data taught by Tsztoo in an efficient manner through saving processing time and reduction of cost in transmission [refer Schlegel; column 1 lines 55-60].

Regarding claims 2 and 7, Tsztoo teaches when storage of symbols corresponding to a predetermined logical channel has been completed (voice data is stored into the buffer system in a channel by channel basis, with locations in the buffer memory are predetermined for channels)[column 6 lines 42-58], an initial symbol of a channel is subsequently stored at a position of a word in the buffer memory next to the already-

stored symbols (the storing of data symbol among channels is continuous in the buffer) [column 10, lines 12-16, 29-32].

Regarding claim 3 and 8, Tsztoo teaches a selection signal input to the multiplexer (i.e., enable signal sent from request arbiter 928 to mux 930) is produced by reading an enable state of a corresponding channel by means of a pulse signal (i.e. control signal, column 14, lines 8-12) of each channel, the enable state of the corresponding channel being stored in the start address table (i.e., channel address memory 922, FIG. 9).

3. Claims 4-5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsztoo et al. in view of et al. as applied to claims 1-3 and 6-8 above, in further view of Witkowski et al (U.S Patent No. 6,201,789 B1)(Witkowski hereafter).

Regarding claims 4-5 and 9-10, Tsztoo and Kuehnell fail to teach when symbol data for one channel are divided and stored in at least two storage sectors of the buffer memory, link information between the storage sectors in which the symbol data for said one channel are stored is stored in the buffer memory and in the start address table.

Witkowski teaches a network switch having a plurality of ports for sending and receiving data packets. It is disclosed that a switch includes a memory having a data packet portion divided into sectors chained together using link addresses. According to the embodiment, the sectors are initially linked into a freepool chain of sectors. As data

packets are received, a receive sector chain is created for each network port by pulling sectors from the freepool chain as needed (column 3, lines 54-64). Hence, the link addresses enable the data packets stored in different sectors to be transmitted and received in their entirety.

It would have been obvious to one with ordinary skill in the art at the time of the invention was made to modify the teachings of Tsztoo and Schlegel to create link information when data for one channel are divided and stored in at least two storage sectors of the buffer memory and store such linking information in the buffer memory and in the start address table as taught by Witkowski. One would be motivated to do so in order to include transmit address links to form transmit packet chain for each port receiving data packets for transmission [refer Witkowski; column 3, lines 44-47].

Response to Arguments

4. Applicant's arguments, see page 7, filed 12/11/2009, with respect to the rejection of claims 1-10 under 35 U.S.C. 103(a) in view of reference Keuhnel et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made in view of Schlegel.

1. Regarding claims 1 and 6, applicant argues that the applied reference, Tsztoo, does not teach "a buffer memory for storing symbol data for the logical channel according to input sequences."

In response to the above-mentioned argument, examiner respectively disagrees. Tsztoo teaches a voice packet (symbol data) buffer memory that stores the data (i.e. the symbol data claimed) according to an input instruction, which is broadly interpreted as the claimed **input sequence**, referred in the previous office action and to in Fig. 9; 926 in Tsztoo, CHANNEL_ADD. Tsztoo discloses that CHANNEL_ADD, or CHAN.sub.13 ADD, as further explained in column 15 lines 11-19, notifies or instructs the VPBM system of where store voice data in accordance to a channel. In broadly interpreting the claim language, a buffer memory for storing the symbol data for the logical channel was broadly interpreted by the examiner to be for directing data from a channel into the memory, since data corresponds to a particular "logical" channel as recited in the preamble of the claims.

In the previous office action, the examiner had indicated that Tsztoo failed to disclose in the same embodiment that the symbol data of the logical channels are stored in a **continuous arrangement** within the buffer memory, and relied with reference to a second embodiment buffer memory disclosed by Tsztoo [refer Fig. 4; 406] for obviousness combination, showing that the voice data can be stored together or "binned"(continuous arrangement) according to predetermined channel [column 10, lines 12-28][refer Fig. 7; 700-0] for use in place of the voice packet buffer memory (VPBM) disclosed in the third embodiment as a variation or substitution of a known form of memory as was disclosed within the disclosure of Tsztoo.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan C. Kavleski whose telephone number is 571-270-3619 and fax number is 571-270-4619. The examiner can normally be reached on Mon-Fri 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang T. Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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